Report Information from Dialog DataStar

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Unsupervised simultaneous registration and exposure correction.

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Conference information
2006 International Conference on Image Processing, Atlanta, GA, USA,
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Source
2006 International Conference on Image Processing, 1996, p. 4 pp., 10 refs, pp. CD–ROM, ISBN:
1–4244–0481–9. Publisher: IEEE, Piscataway, NJ, USA.
Author(s)
Aguiar–P–M–Q.
Author affiliation
Aguiar, P.M.Q., IST, Inst. for Syst. & Robotics, Lisboa.
Abstract
Early approaches to building **mosaics** by composing photographic images, assume the input images have similar exposures. Since this is unlikely to happen in practice, it became common to compensate for different exposures in the blending step, after the images have been registered, or aligned. However, registration methods usually assume brightness constancy and fail to align images with different exposures. Recent approaches to this problem lead to computationally complex solutions that require either robust statistics or nonlinear optimization. In this paper we propose a computationally simple method to jointly estimate the registration parameters and the parameters describing the exposure correction, directly from the image intensity values. We obtain closed–form solutions for the estimates of the exposure parameters. This enables the derivation of a simple two–step iterative algorithm to minimize the global cost. Our experiments show that this algorithm succeeds to register real images exhibiting simultaneously very distinct orientations and exposures.
Descriptors
IMAGE–REGISTRATION; IMAGE–SEGMENTATION; ITERATIVE–METHODS.
Classification codes
B6135 Optical–image–and–video–signal–processing*;
B0290F **Interpolation–**and–function–approximation–numerical–analysis;
C5260B Computer–vision–and–image–processing–techniques*;
C4130 **Interpolation–**and–function–approximation–numerical–analysis.
Keywords
unsupervised–simultaneous–registration; photographic–image; exposure–
correction; two–step–iterative–algorithm; robust–statistics;
nonlinear–optimization.
Treatment codes
X Experimental;
T Theoretical–or–mathematical.
Language
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Availability
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Fingerprint mosaicking.

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Proceedings of International Conference on Acoustics, Speech and Signal Processing (CASSP'02), Orlando, FL, USA, 13–17 May 2002.
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2002 IEEE International Conference on Acoustics, Speech, and Signal Processing. Proceedings (Cat. No.02CH37334), 2002, vol.4, p. IV4064–7 vol.4, 5 refs, pp. 4 vol.civ+4194, ISBN: 0–7803–7402–9.
Publisher: IEEE, Piscataway, NJ, USA.
Author(s)
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Abstract
It has been observed that the reduced contact area offered by solid– state fingerprint sensors does not provide sufficient information (e.g., number of minutiae) for high accuracy user verification. Further, multiple impressions of the same finger acquired by these sensors may have only a small region of overlap, thereby degrading the matching performance of the verification system. To deal with this problem, we have developed a fingerprint **mosaicking** scheme that constructs a composite fingerprint template using multiple impressions. A composite template reduces storage, improves matching time and alleviates the problem of template selection. In the proposed algorithm, two impressions (templates) of a finger are initially aligned using the corresponding minutiae points. This alignment is used by a modified version of the well–known iterative closest point algorithm (ICP) to compute a transformation matrix that defines the spatial relationship between the two impressions. The resulting transformation matrix is used in two ways: (a) the two templates are stitched together to generate a composite image and minutiae points are then detected in this composite image; (b) the minutia maps obtained from each of the individual impressions are integrated to create a larger minutia map. Our experiments show that a composite template improves the performance of the fingerprint matching system by ~4%.
Descriptors
FINGERPRINT–IDENTIFICATION; IMAGE–MATCHING; IMAGE–SEGMENTATION; ITERATIVE–METHODS; MATRIX–ALGEBRA.
Classification codes
B6135 Optical–image–and–video–signal–processing*;
B0290F **Interpolation–**and–function–approximation–numerical–analysis;
B0290H Linear–algebra–numerical–analysis;
C5260B Computer–vision–and–image–processing–techniques*;
C1250M Image–recognition;
C4130 **Interpolation–**and–function–approximation–numerical–analysis;
C4140 Linear–algebra–numerical–analysis.
Keywords
fingerprint–mosaicking; solid–state–fingerprint–sensors; overlap–region; matching–performance; composite–template; multiple–impressions; iterative–closest–point–algorithm; transformation–matrix; minutia–maps.
Treatment codes
P Practical;
T Theoretical–or–mathematical;
X Experimental.
Language
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Image mosaic and interpolation by multiresolution morphological pyramids.

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Conference information
Visual Communications and Image Processing '90, Lausanne, Switzerland, 1–4 Oct. 1990.
Sponsor(s): SPIE; Swiss Federal Inst. Technol.
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Proceedings of the SPIE – The International Society for Optical Engineering, {Proc–SPIE–Int–Soc–Opt–Eng–USA}, 1990, vol. 1360, p. 284–92, 6 refs, CODEN: PSISDG, ISSN: 0277–786X, USA.
Author(s)
Soo–Chang–Pei, Hann–Bao–Tsai.
Author affiliation
Soo–Chang Pei, Hann–Bao Tsai, Dept. of Electr. Eng., Nat. Taiwan Univ., Taipei, Taiwan.
Abstract
The morphological pyramid is a new computationally efficient algorithm for generating multidimensional bandpass representation of an image. Its flexible convenient multiresolution format mirrors the multiple scales of processing in the human visual system. Here the morphological pyramid is used for image **mosaic** and smear removal by multiresolution **interpolation.** Some image examples show the effectiveness of this approach.
Descriptors
INTERPOLATION; PICTURE–PROCESSING.
Classification codes
B6140C Optical–information–image–and–video–signal–processing*;
B0290F **Interpolation–**and–function–approximation–numerical–analysis;
C5260B Computer–vision–and–image–processing–techniques*;
C4130 **Interpolation–**and–function–approximation–numerical–analysis.
Keywords
mathematical–morphology; morphological–pyramid; human–visual–system; **image–**mosaic; smear–removal; **multiresolution–**interpolation.
Treatment codes
T Theoretical–or–mathematical.
Language
English.

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Two–dimensional image interpolation.

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IBM Technical Disclosure Bulletin, {IBM–Tech–Discl–Bull–USA}, Nov. 1978, vol. 21, no. 6, p. 2509–10, 0 refs, CODEN: IBMTAA, ISSN: 0018–8689, USA.
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Abstract
Two–dimensional image **interpolation** is accomplished by a system of tapped analog delay lines and transversal filters which **interpolate** a two–dimensional **mosaic** image along the rows of the **mosaic** and then along the columns. The **interpolator** is programmable by changing of the weighing coefficients in the transversal filters. The apparatus may use charge–coupled devices for propagating analog signals, and requires only one pass through the data.
Descriptors
ANALOGUE–STORAGE; CHARGE–COUPLED–DEVICE–CIRCUITS; COMPUTERISED–PICTURE–PROCESSING; DELAY–LINES; **INTERPOLATION.**
Classification codes
C1260 Information–theory*;
C5330 Analogue–storage.
Keywords
transversal–filters; **mosaic–**image; **interpolator;** weighing–coefficients; **two–**dimensional–image–interpolation; tapped–analogue–delay–lines.
Treatment codes
A Application;
P Practical.
Language
English.
Publication type
Journal–paper.
Publication year
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Search Strategy

No.	Database	Search term	Info added since	Results
1	INZZ	mosaic$4 AND interpolat$4	unrestricted	197
2	INZZ	limit set 1 YEAR < 2004		105

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